

CLEARING THE AIR

2020 APCD Workshops



Today's workshop seeks to:

1. Discuss environmental justice and its relationship to air toxics in Louisville.
2. Review the STAR Program, its formation and its connection to environmental justice.
3. Share how collaborative efforts between the Louisville Metro, the community and APCD continue to address air toxics in Louisville.

Are you curious about the air you breathe,
what's in it, and how it's protected?

CLEARING THE AIR

2020 APCD Workshops



Join us at our free workshops
and get an in-depth look
at how we keep the air clean.

AIR
POLLUTION
CONTROL
DISTRICT



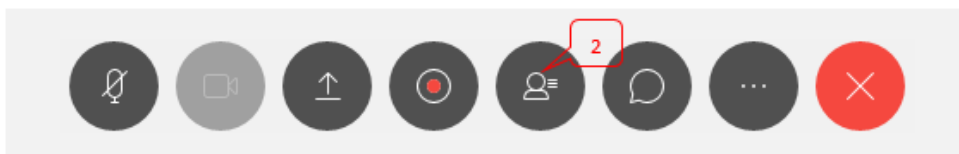
Welcome to the APCD
2020 *Clearing the Air*
workshop series!

Please stand-by, the
workshop will begin
shortly.

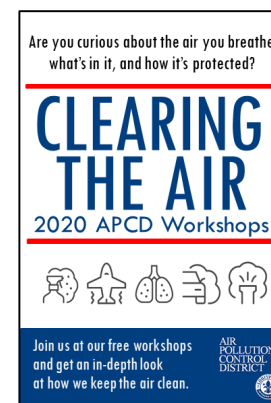
*Note: All attendee
phone lines are muted.
Today's workshop is
being recorded.*

Webinar Tips

- To access controls while viewing the presentation, hover over the bottom of your screen.



- Please utilize the Chat feature to submit your questions.
- If **only** connecting by telephone, you will not have access to the Chat feature. Please email your questions to clearingtheair@louisvilleky.gov.



CLEARING THE AIR

2020 APCD Workshops



The [APCD Workshop Series](#) seeks to:


1. Improve the community's understanding of APCD's role in improving Louisville's air.
2. Empower community with accessible information.
3. Offer an informal setting/environment for dialogue, discussion and feedback.
4. Build relationships.

CLEARING THE AIR

2020 APCD Workshops



Remember...

- There are NO silly questions
- Public Participation = A yellow sun icon with a purple outline and the letters "PP" in the center.
- Interactive/informal workshop
 - Ask questions as they come to mind
 - Feedback? Email Clearingtheair@louisvilleky.gov



The STAR Program & Environmental Justice

Air Pollution Control District
11/23/2020



Roadmap

- **Environmental Justice and Air Toxics in Louisville**
- Louisville's STAR Program
- Current Status
- Continued Efforts



What is Environmental Justice (EJ)?

- The **fair treatment and meaningful involvement of all people** regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
- It's achieved when **everyone** enjoys the same degree of **protection** from environmental and health hazards **and equal access** to the decision-making process to have a healthy environment in which to live, learn, and work.

- [U.S. Environmental Protection Agency](#)

Why is it important to recognize areas of EJ concern?

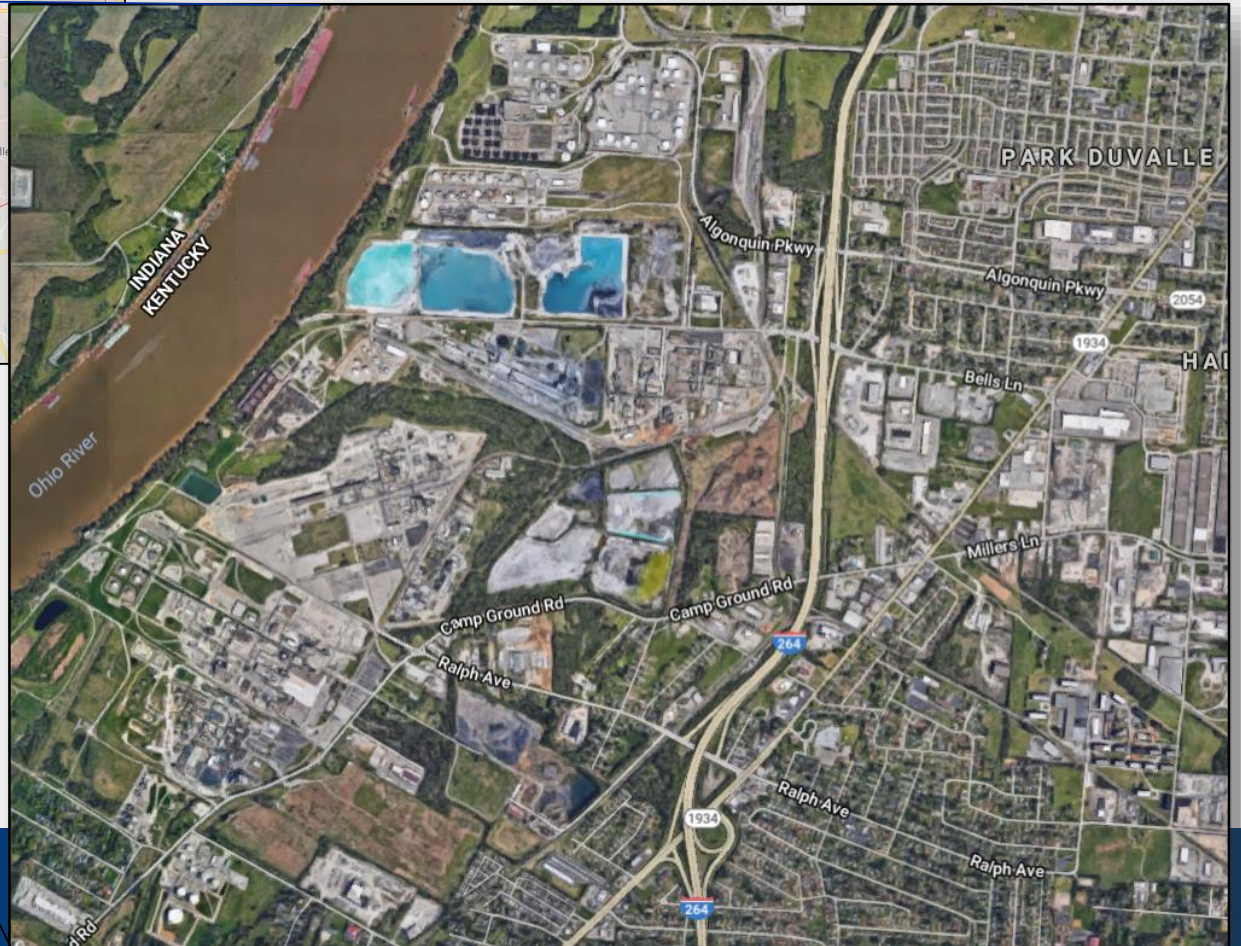
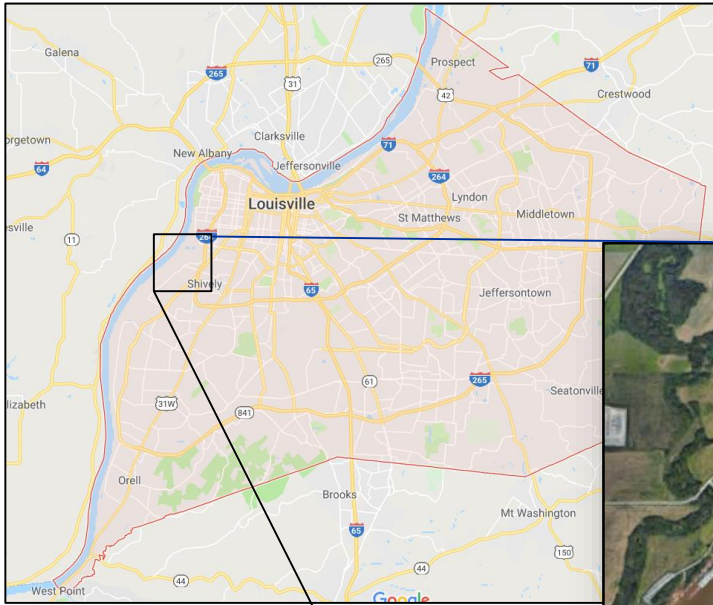
- To address issues related to public health equity, social and economic justice, environmental harms, etc. that disproportionately overburden communities
- To continue fostering collaborations that will raise awareness around EJ
- To promote public participation in community decision-making
- To build communities where *all* people can achieve their full potential

Rubbertown: In the beginning...

- Industrial area located in west Louisville, KY
- **1918** – Formation of the Standard Oil Refinery; the facility set the stage for future industry in the area
- **World War II (1939-1945)** – West Louisville industrial area starts producing synthetic rubber for tires and other key components used during the war; area now called “Rubbertown”



Rubbertown: Today



Rubbertown

- **1996** – Formation of the [West Jefferson County Community Task Force \(WJCCTF\)](#)
- **Early 2000's** – Health assessments conducted in Rubbertown neighborhoods; assessments found a greater risk of cancer and other illnesses to Rubbertown residents compared to other areas in Louisville; West Louisville Air Toxics Study identified 17 carcinogens with risk greater than one in a million (1×10^{-6})



What are Air Toxics?

- Air toxics are...
 - Hazardous Air Pollutants (HAPs)
 - Pollutants known/suspected to cause cancer or other serious health effects
 - Emitted from a variety of sources
 - Point and Area Sources (*e.g.*, factories, refineries, power plants, fuel terminals, gas stations, dry cleaners, paints, solvents, etc.)
 - Mobile Sources (*e.g.*, cars, trucks, buses, trains, planes, etc.)
 - Natural sources (*e.g.*, forest fires and volcanic eruptions)

Air Toxics: Health Effects

Reproductive

Cardiovascular
Disease

Developmental

Respiratory

Cancer

Neurological

West Louisville Air Toxics Study (WLATS)

- 1-year monitoring study (April 2000 to April 2001)
- **Study conducted by the community and risk assessment contractor selected by the community**
- Monitored for:
 - 83 Volatile organic Compounds (VOCs)
 - 63 Semi-VOCs
 - Formaldehyde, HCl, HF
 - 20 metals
- Results found:
 - 17 carcinogens with risk > than one in a million (1×10^{-6})



EPA Relative Risk Screening Assessment

- Conducted by the U.S. EPA Region 4
- Released the toxics characterization report during the WLATS study
- Assessment evaluated 736 counties in 8 southeast states (KY, TN, GA, NC, SC, FL, AL, MS)
- Jefferson County was the number one county in risk of exposure to toxic air pollutants in the 8 southeast states



Toxics Release Inventory (TRI) Program

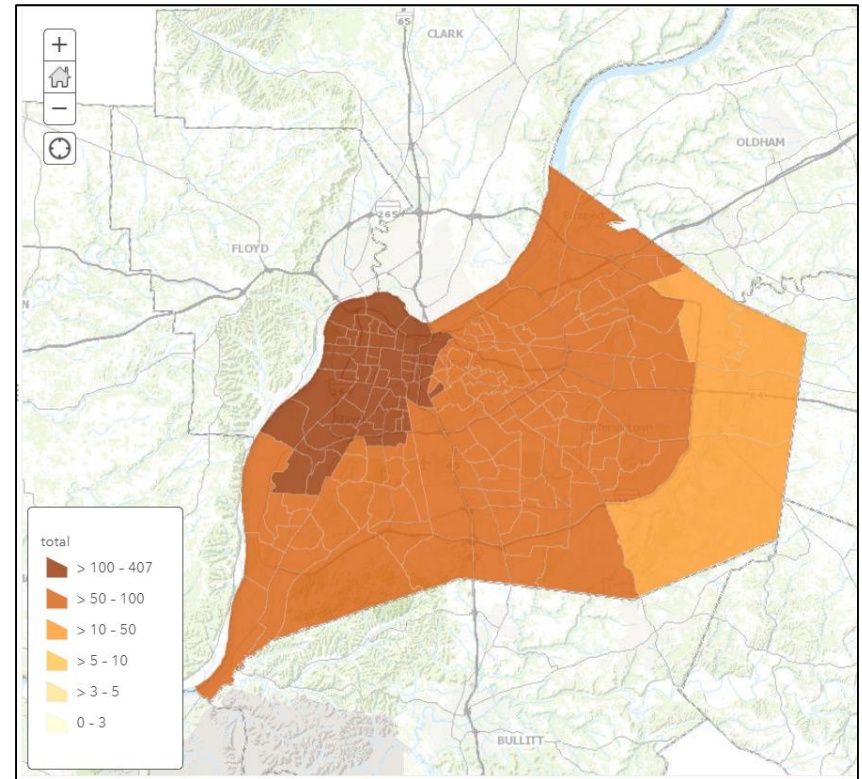
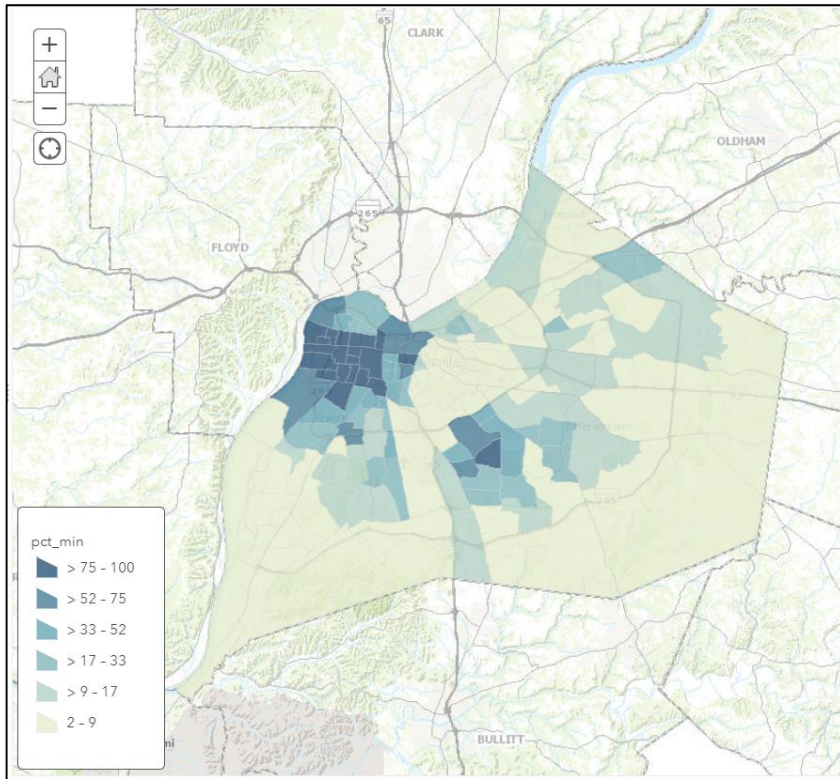
- Created by [EPCRA](#) (Section 313) in 1986
- Tracks the management of certain toxic chemicals that **may pose a threat to human health and the environment**
- U.S. facilities ***must*** report annually if:
 - In certain industries,
 - > 10 FTEs, and
 - 100/10,000/25,000 lb. thresholds
- Report excess emissions releases to air, water, & land

National Air Toxics Assessment (NATA)

- Periodic national modeling of outdoor air toxics from all sources (2005, 2011, 2014)
- Designed to help reduce toxic air pollution and build on the large emissions cuts achieved in the United States since 1990.
- A screening tool for state, local, and tribal air agencies

EJ in Louisville: Air Toxics

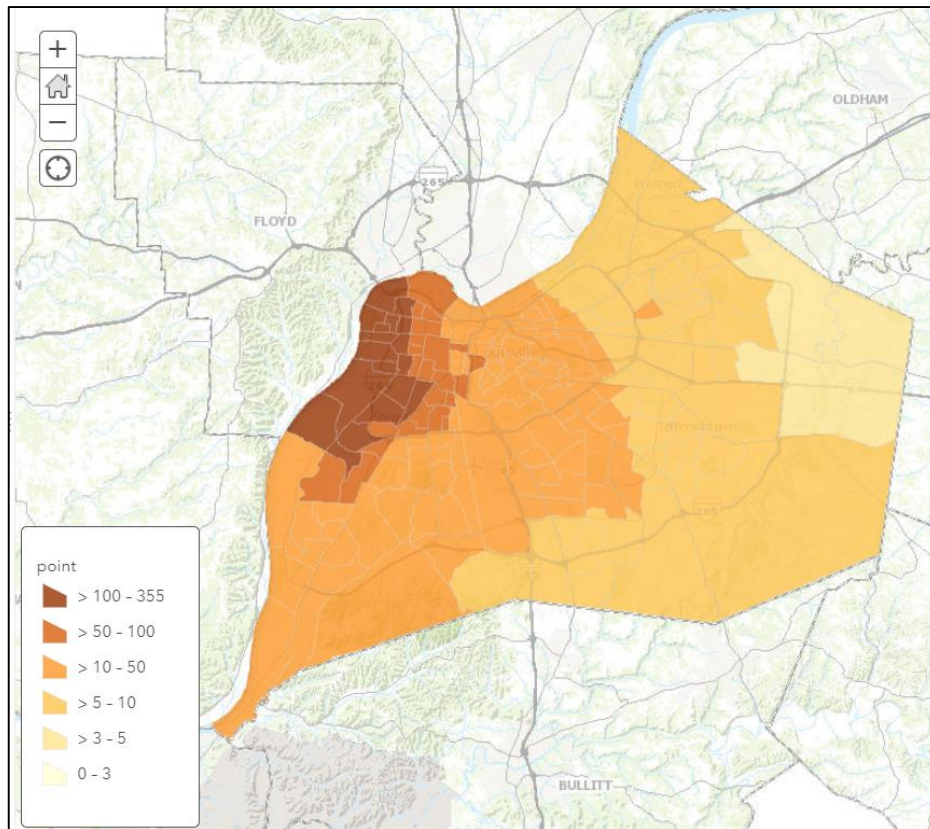
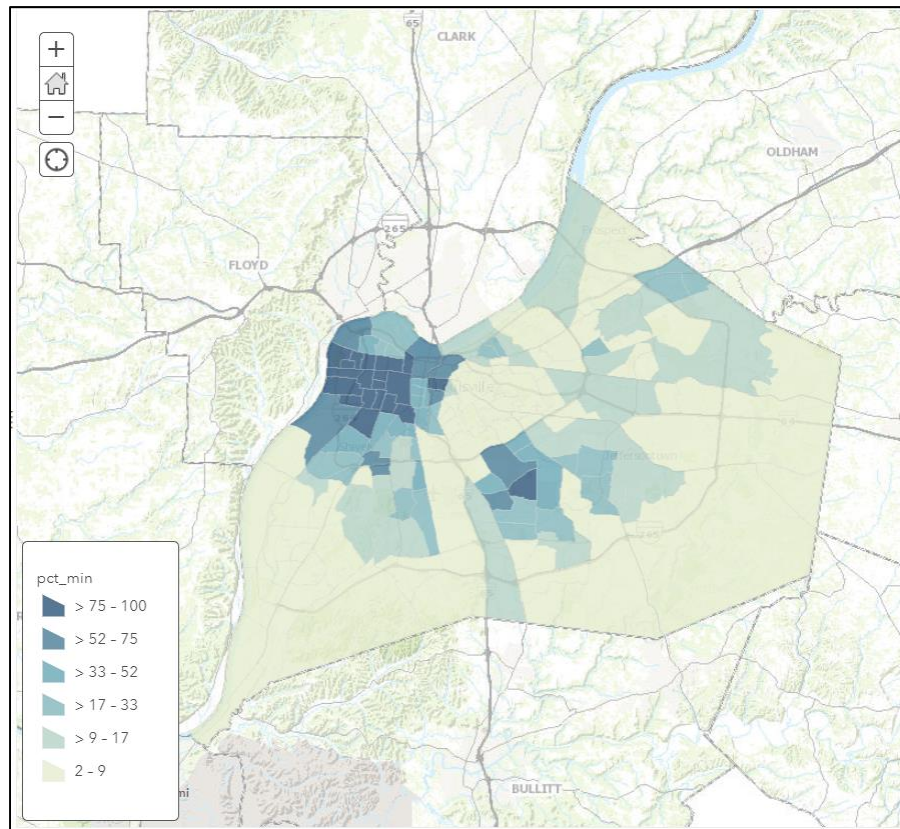
2000 Census Percent Minority v 2005 National Air Toxics
Assessment, All Sources



Data sourced from the U.S. Census Bureau and the [National Air Toxics Assessment \(NATA\)](#)

EJ In Louisville: Air Toxics

2000 Census Percent Minority v 2005 NATA Risk (in a million),
Point Sources



Data sourced from U.S. Census Bureau and the [National Air Toxics Assessment \(NATA\)](#) data tools.

Roadmap

- Environmental Justice and Air Toxics in Louisville
- **Louisville's STAR Program**
- Current Status
- Continued Efforts



The Clean Air Act (CAA) and Air Toxics

- Hazardous Air Pollutants (HAPs)
- The Clean Air Act (CAA) requires EPA to regulate “toxic air pollutants...from large industrial facilities in two phases”:
 - Phase 1: “Technology-based” approach
 - Phase 2: “Risk-based” approach

STAR Program Development

A regulatory program to reduce harmful contaminants in the air we breathe, to better protect the health of our citizens, and enhance the quality of life.



STAR Program Timeline

1996 - 2000

WJCCTF formed;
WJCCTF begins
hosting Monthly
Meetings

**Sept.
2004**

First
Draft
STAR
Program

**July
2005**

Adopted
STAR
Program

**2000 -
2003**

West
Louisville
Air Toxics
Study

**Jan.
2005**

Proposed
STAR
Program

**2005 -
Present**

Implementation

Community Involvement

BEFORE the adoption of STAR

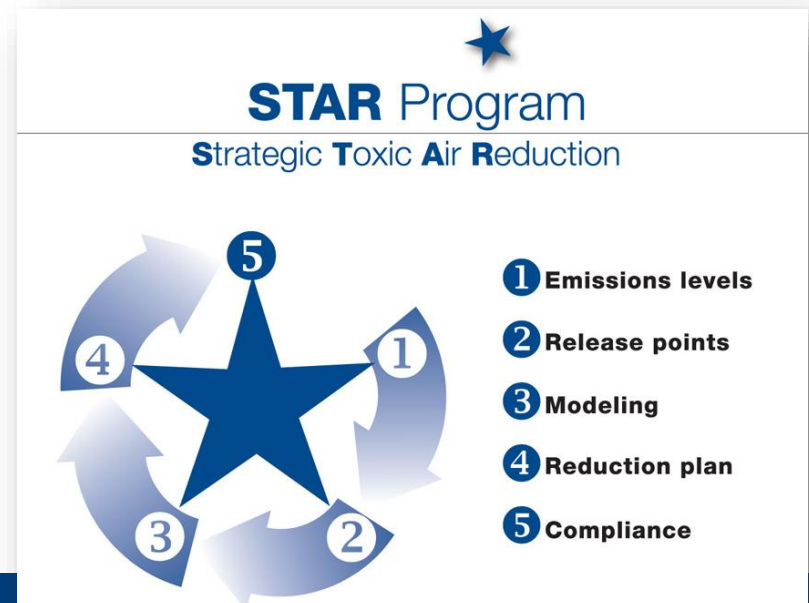
- Multiple community meetings and public forums (**over 50**) held to discuss the STAR Program & the draft regulations
 - Monthly presentations by EPA, local industries, local agencies, community groups and citizens/Rubbertown residents
- Built consensus on key issues, including location of monitoring sites, target level risks, pollutants of concern, etc.
- Opportunities for public comment



STAR Program Highlights

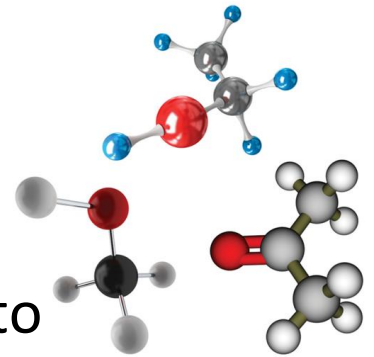
The STAR Program

1. Provides a framework for determining the environmental acceptability of toxics
2. Requires companies to assess and address air toxics emissions
3. Requires APCD to assess and address other sources toxic emissions



The STAR Program

- What's the science?
 - APCD relies upon toxicologists and other researchers to establish risk levels of each chemical
 - Benchmark Ambient Concentration (BAC)
- What's the permitting process?
 - EPA approved dispersion models are used to estimate maximum concentrations
 - Compared to BAC – "magic number"
 - Ratio is Cancer Risk or Hazard Quotient
 - Set compliant emission rate as limit in permit
 - Develop compliance demonstration methods



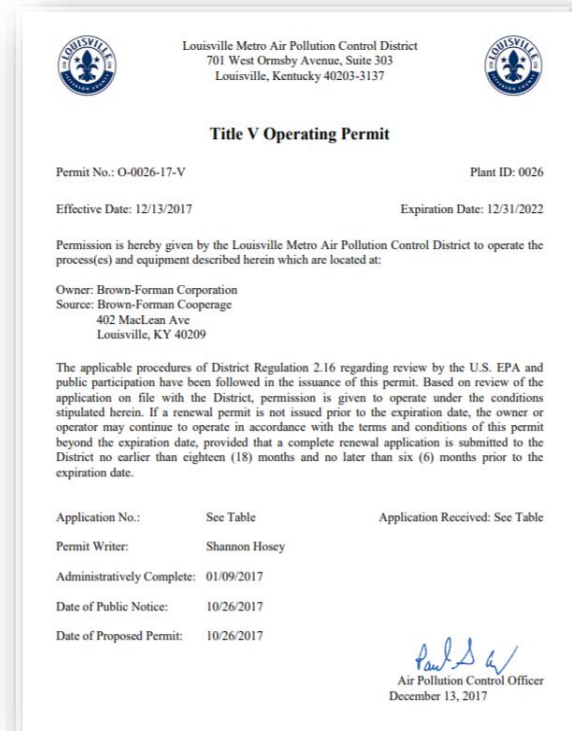
What toxic chemicals are regulated under STAR?

Toxic Air Contaminants (TACs)

- Category 1 – 17 identified from the West Louisville Air Toxics Study (WLATS)
- Category 2 – 19 identified Risk Screening Environmental Indicators (EPA-4 ATRRSA)
- Category 3 – Urban Air Toxics not included under Category 1 or 2
- Category 4 – Remaining Hazardous Air Pollutants (HAPs)

What sources are regulated under the STAR Program?

- All Title V
- Larger FEDOOPs
- General Duty allows for review of any source



The image shows a 'Title V Operating Permit' issued by the Louisville Metro Air Pollution Control District. The permit is for Brown-Forman Corporation, located at 402 MacLean Ave, Louisville, KY 40209. It includes details such as Permit No. O-0026-17-V, Plant ID: 0026, Effective Date: 12/13/2017, and Expiration Date: 12/31/2022. The permit is signed by the Air Pollution Control Officer on December 13, 2017.

Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137

Title V Operating Permit

Permit No.: O-0026-17-V Plant ID: 0026

Effective Date: 12/13/2017 Expiration Date: 12/31/2022

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

Owner: Brown-Forman Corporation
Source: Brown-Forman Cooperage
402 MacLean Ave
Louisville, KY 40209

The applicable procedures of District Regulation 2.16 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than eighteen (18) months and no later than six (6) months prior to the expiration date.

Application No.: See Table Application Received: See Table

Permit Writer: Shannon Hosey

Administratively Complete: 01/09/2017

Date of Public Notice: 10/26/2017

Date of Proposed Permit: 10/26/2017

Paul D. [Signature]
Air Pollution Control Officer
December 13, 2017

Community Involvement

AFTER the adoption of STAR...

- Stakeholder Groups
 - STAR Implementation Advisory Group (2005 – 2007)
 - Reviewed “nuts and bolts” of the newly implemented program
 - [STAR Regulation 5.30 Stakeholder Group](#) (2005 – 2007)
 - Developed, reviewed and commented on, the “Report” assessing the risk to human health and welfare and the “Plan of Action” to reduce risk from “smaller sources” emitting toxic emissions throughout the community
 - Required public notice and comment periods
 - Additional air monitoring data

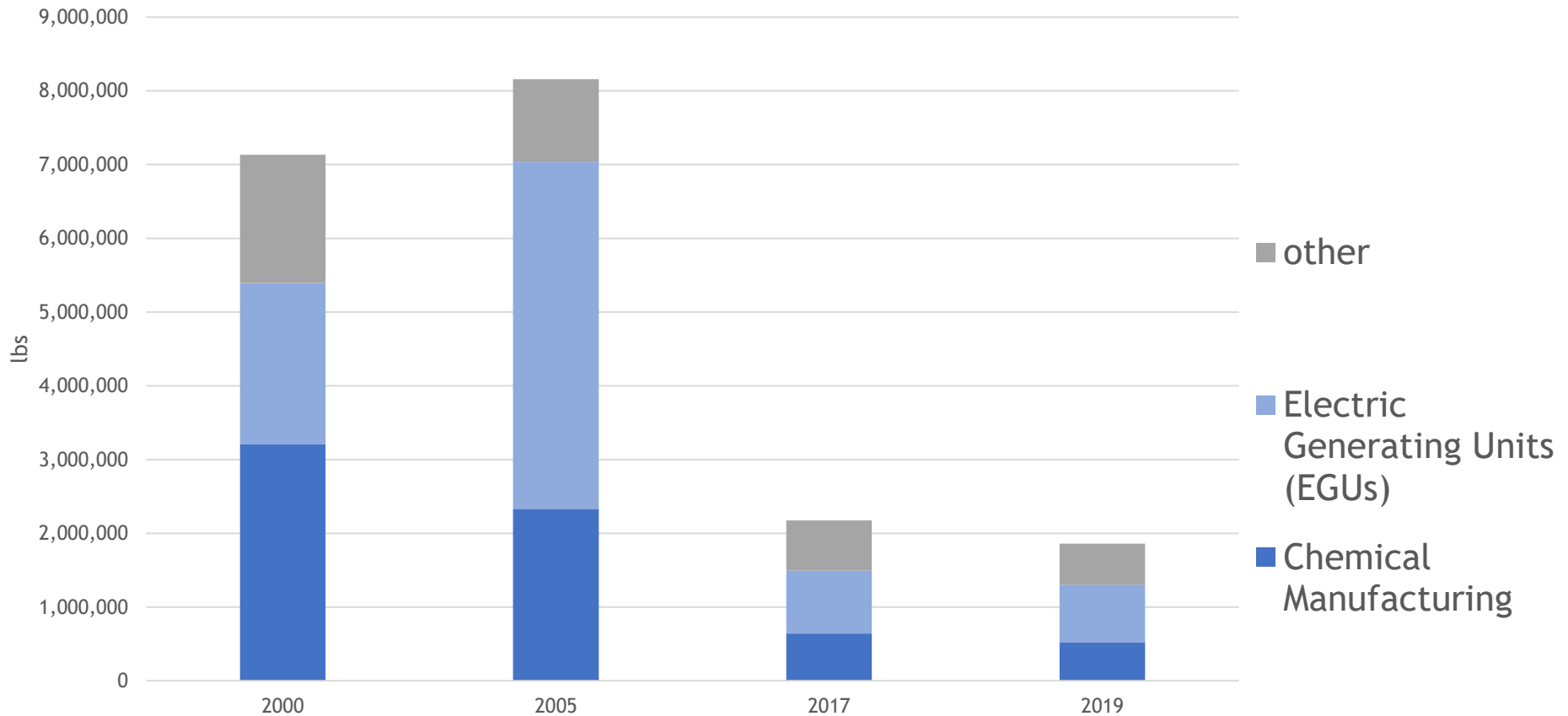


Roadmap

- Environmental Justice and Air Toxics in Louisville
- Louisville's STAR Program
- **Current Status**
- Continued Efforts



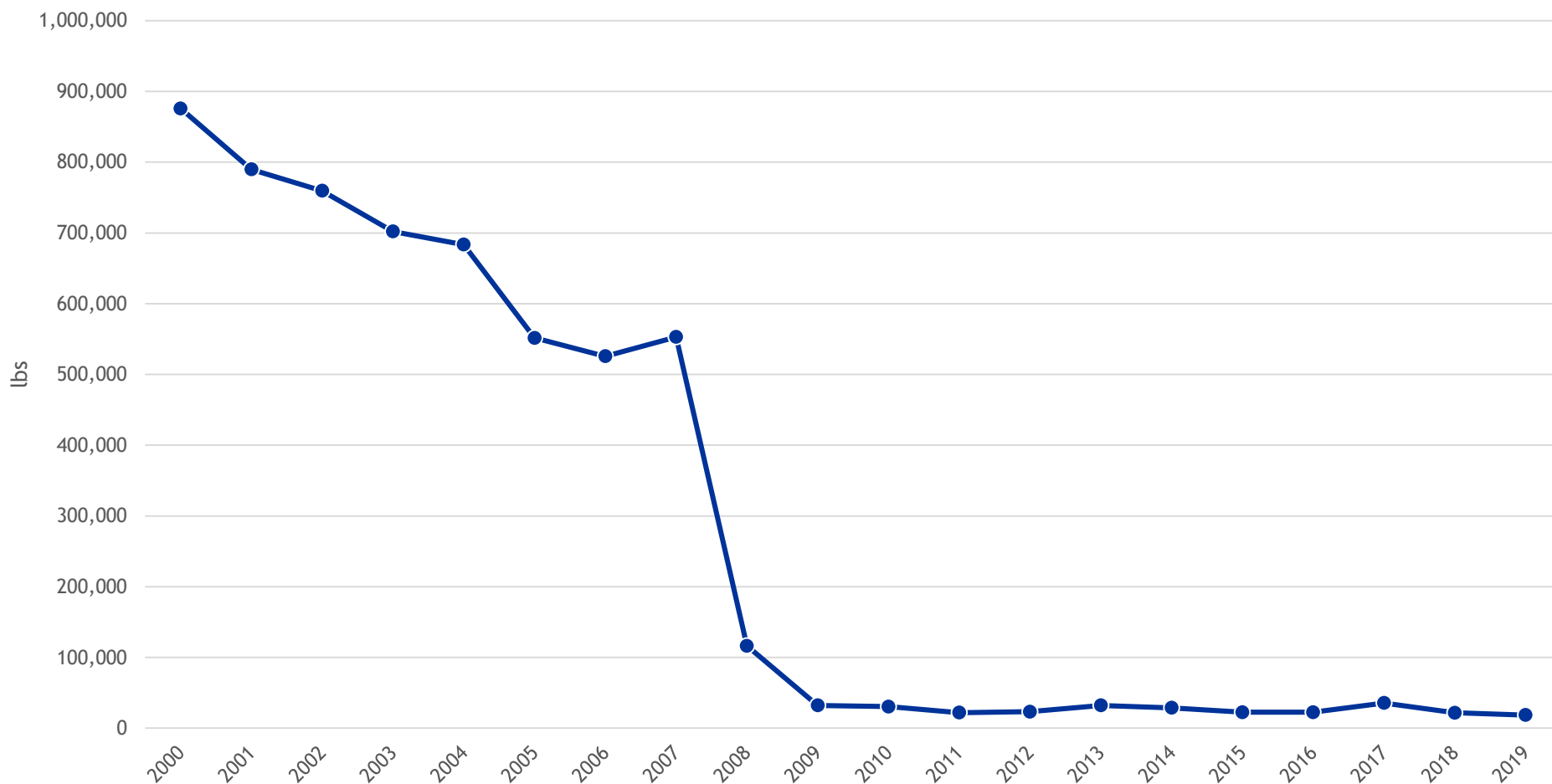
Total Air Toxics 2000 v 2019



Source: EPA Toxics Release Inventory

Louisville Toxic Air Emissions 2000-2019

Category 1 TAC Emissions



National Toxic Air Emissions 2000 v. 2019

2000 – 11th

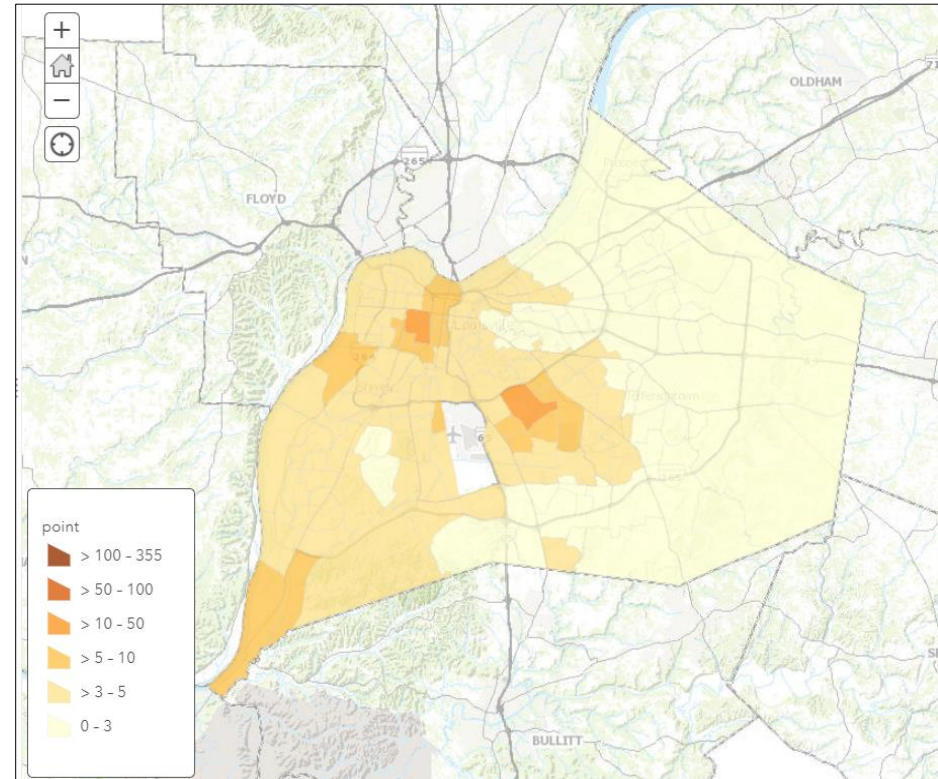
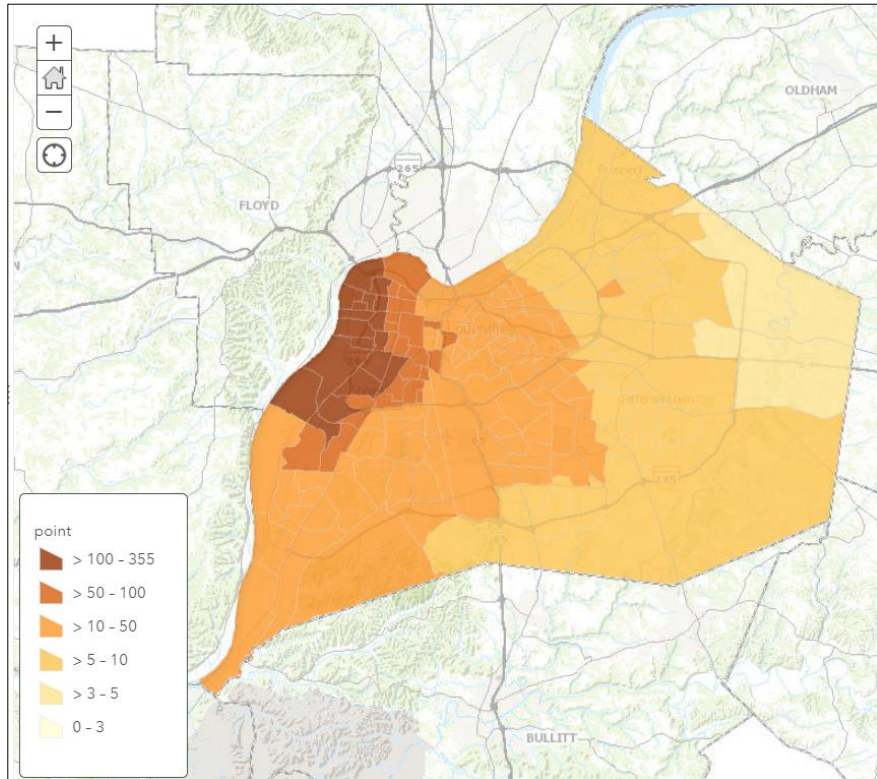
County	Total Air Releases
LEE, MS	3046517
ELKHART, IN	2691389
HARRIS, TX	2160894
ERIE, PA	1856482
BARCELONETA, PR	1366249
MONROE, NY	1322591
GIBSON, TN	1305875
ALLEN, OH	1155452
GEORGETOWN, SC	1139579
LUZERNE, PA	1085249
JEFFERSON, KY	875948

2019 – 188th

County	Total Air Releases
HARRIS, TX	839,768
JEFFERSON, TX	573,677
ORANGEBURG, SC	451,403
SEDGWICK, KS	358,331
BRAZORIA, TX	297,451
YAUCO MUNICIPIO, PR	265,013
ASCENSION PARISH, LA	242,444
CALCASIEU PARISH, LA	241,039
GREENUP, KY	240,472
MORGAN, AL	184,589
...	
BOYD, KY	18,724
JEFFERSON, KY	18,627

Progress to Date: Health Risk

2005 v 2014 National Air Toxics Assessment – Point Sources



[National Air Toxics Assessment \(NATA\)](#)

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Rubbertown: Air Monitoring

2020 Kentucky Annual Ambient Air Monitoring Network Plan



The monitoring site is a station on the grounds of the Firearm Training Center in Louisville, Kentucky. The sample line is at a level of 53.5 meters. In the last inspection, the sample lines were in good condition. The air quality is established by 40 CFR Part 50.

LMAPCD replaced the existing shelter in September, 2017. The monitor (Auto GC) and particulate instruments were installed by January 1, 2018. The site is located at the Community Center site. The name of this site was changed from Firearms Training to Algonquin Parkway in 2020.



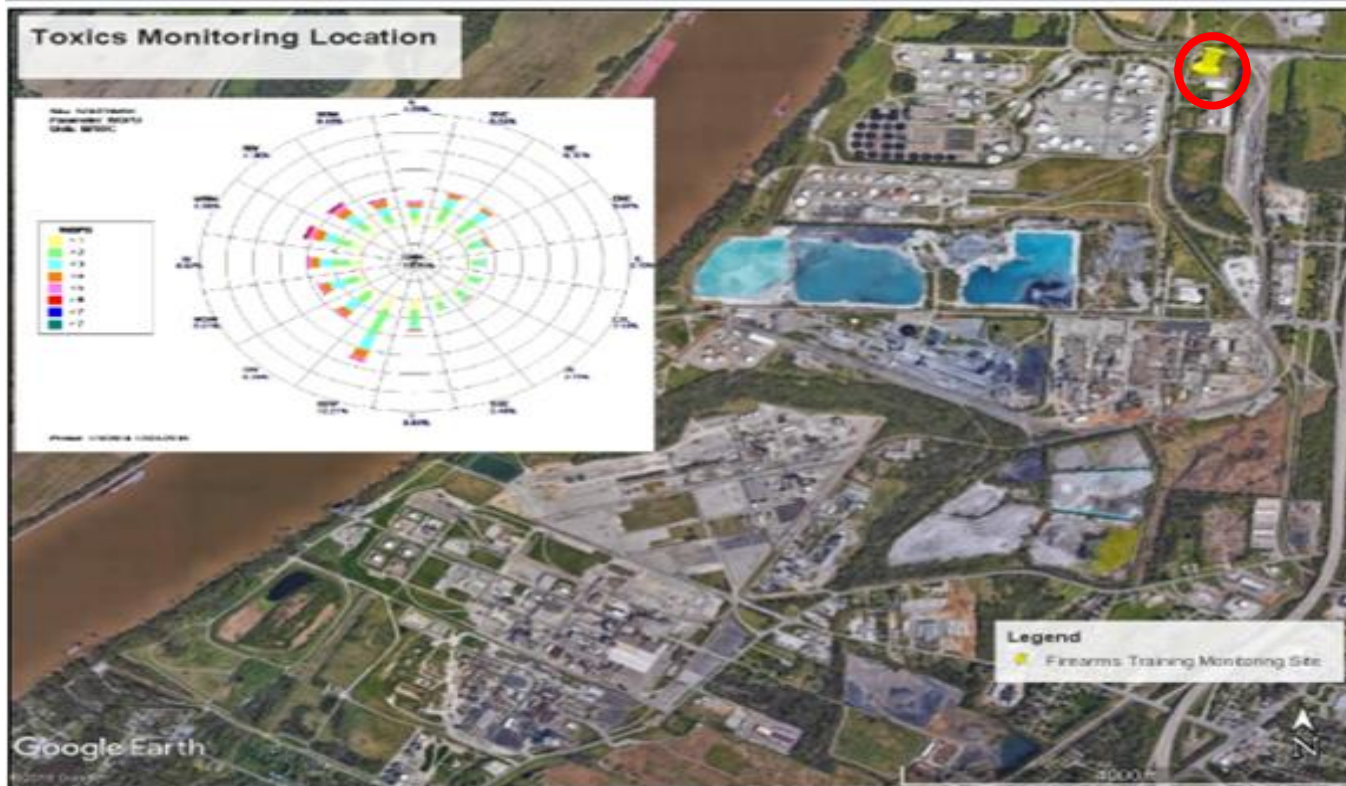
Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards, to provide pollution levels for daily index reporting, and to characterize VOC concentrations.

Air Toxics Monitoring

Algonquin Parkway (Firearms Training)

Air Monitoring Site



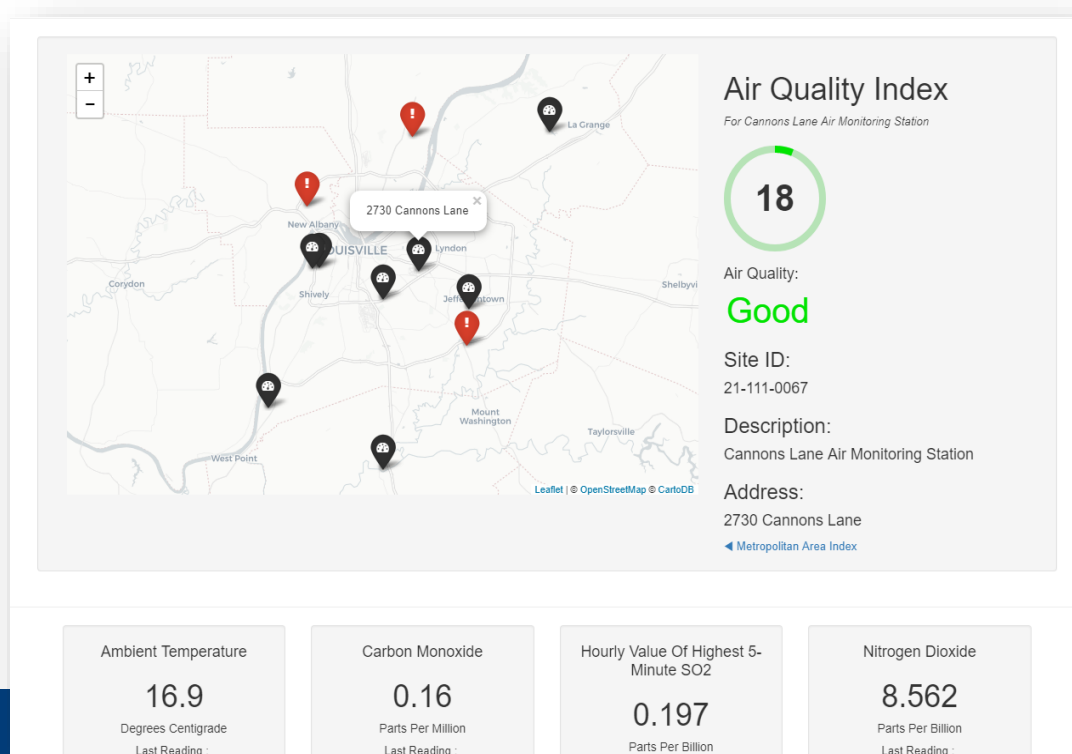
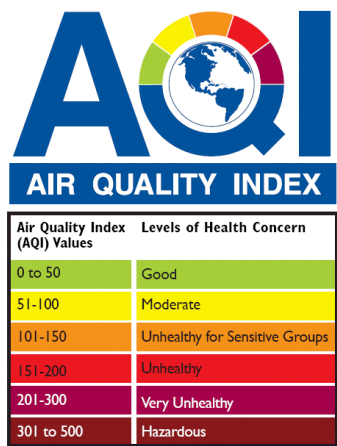
What is being monitored?

<u>CAS No.</u>	<u>Compound</u>	<u>TAC No.</u>
107-13-1	Acrylonitrile	1
71-43-2	Benzene	1
75-25-2	Bromoform	1
106-99-0	1,3 Butadiene	1
56-23-5	Carbon tetrachloride	1
67-66-3	Chloroform	1
106-46-7	1,4 Dichlorobenzene	1
75-09-2	Methylene chloride (Dichloromethane)	1

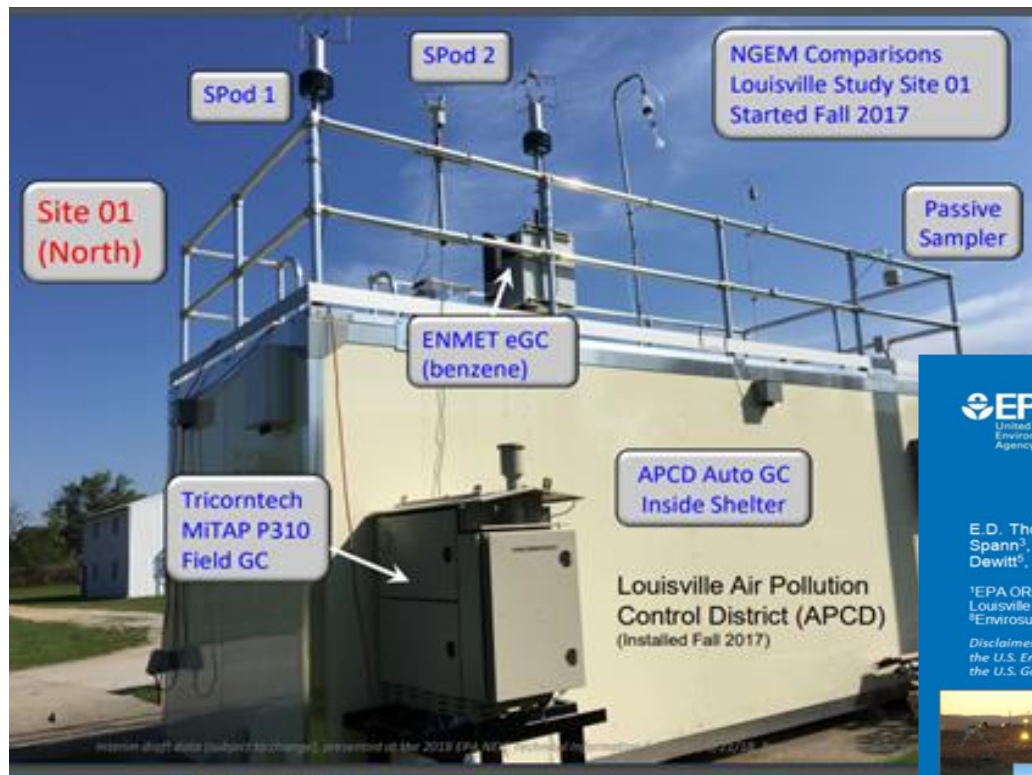
<u>CAS No.</u>	<u>Compound</u>	<u>TAC No.</u>
127-18-4	Perchloroethylene (Tetrachloroethylene)	1
79-01-6	Trichloroethylene	1
75-01-4	Vinyl Chloride	1
108-88-3	Toluene	1
100-41-4	Ethylbenzene	2
108-10-1	Methyl isobutyl ketone (4-Methyl- 2-pentanone)	4
100-42-5	Styrene	4
80-62-6	Methyl methacrylate	4
140-88-5	Ethyl acrylate	4

Louisville Air Watch “2.0”

- Improved access to current air monitoring network data, **including some air toxics**
- Improved user interface
- Look-up function for data from previous days



Collaborations with EPA: RARE Project



EPA
United States
Environmental Protection
Agency

**Air Pollutant Source Investigation using Next Generation
Emission Measurements and Models;
Early Case Studies of 1,3-Butadiene Emissions in Louisville, KY
NEIC 2018 Tech Summit, Denver CO, August 21, 2018**

E.D. Thoma^{1*}, R. Duvall¹, I. George¹, T. Wu¹, H. Brantley^{1**}, D. Whitaker², K. Oliver², N. Carlton-Carew³, J. Spann³, T. Bell³, P. Deshmukh⁴, J. Cansler⁴, T. Cousett⁴, A. Cooley⁵, S. Gravatte⁵, K. Zimmerman⁵, B. Dewitt⁶, B. Paris⁶, W. Tang⁶, T.K.A. Chou⁷, D. Chung⁷, T. Wu⁷, M. Farquhar⁸, A. Quijano⁸, M. Scholl⁸

¹EPA ORD NRMRL, RTP, NC; ²EPA ORD NERL, RTP, NC; ³EPA Region 4, Atlanta, GA; ⁴Jacobs Technology, RTP, NC; ⁵Louisville Metro APCD, Louisville, KY; ⁶ARA Environmental, RTP, NC; ⁷Tricornetech Corporation, Taipei City, Taiwan; ⁸Envirosuite, New South Wales, Australia

Disclaimer: The views expressed in this presentation are those of the authors and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency (EPA). Any mention of trade names, products, or services does not imply an endorsement by the U.S. Government or the EPA. The EPA does not endorse any commercial products, services, or enterprises.

Office of Research and Development
National Risk Management Research Laboratory, Air and Energy Management Division

Interim draft data (subject to change), presented at the 2018 EPA Air Toxics Monitoring Project Technical Information Exchange, 8/21/18, for scientific discussion purposes

NRMRL, Fugitive and Area Source Group
Source and Fenceline Measurements
Methods and Technology Development

Clearing the Air Workshop Series

- Educate and further empower Louisville residents with air quality and process information
- Provide an accurate picture of Louisville's AQ
- Offer trainings on local data resources, EPA's Toxic Release Inventory (TRI), BenMap and more



AIR POLLUTION
CONTROL DISTRICT



Multipollutant Stakeholder Group



More than 90 recommendations!

Example

Recommendations

- The District should investigate opportunities to enhance the official monitoring network.
 - ...ensure community involvement is integral to planning the enhanced monitoring network and when making plans for further analysis (e.g., California AB 617).
- The Louisville Metro Government should mandate the use and incorporation of environmental and health impacts in planning decisions such as those guided by the Comprehensive Plan.
- The District should provide recommendations for the next Health Equity Report focused on air impacts in vulnerable communities or at-risk populations.

POINT SOURCE
COMMITTEE



AREA SOURCE
COMMITTEE



MOBILE SOURCE
COMMITTEE



HEALTH COMMITTEE

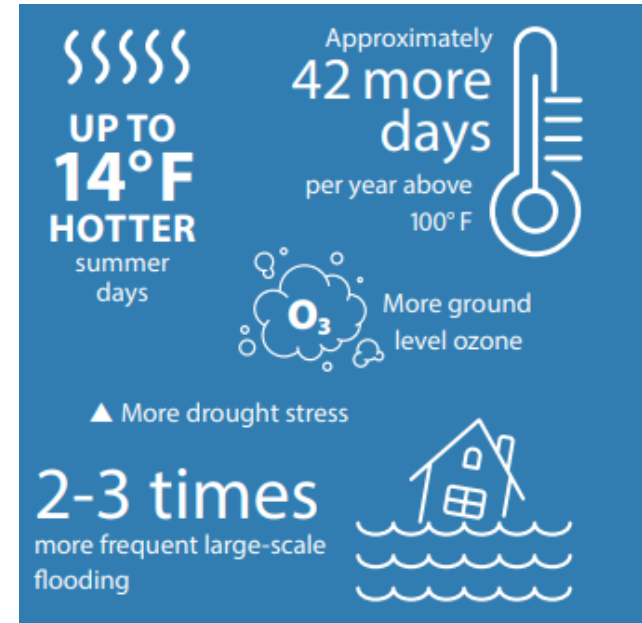


OUTREACH & EDUCATION
COMMITTEE

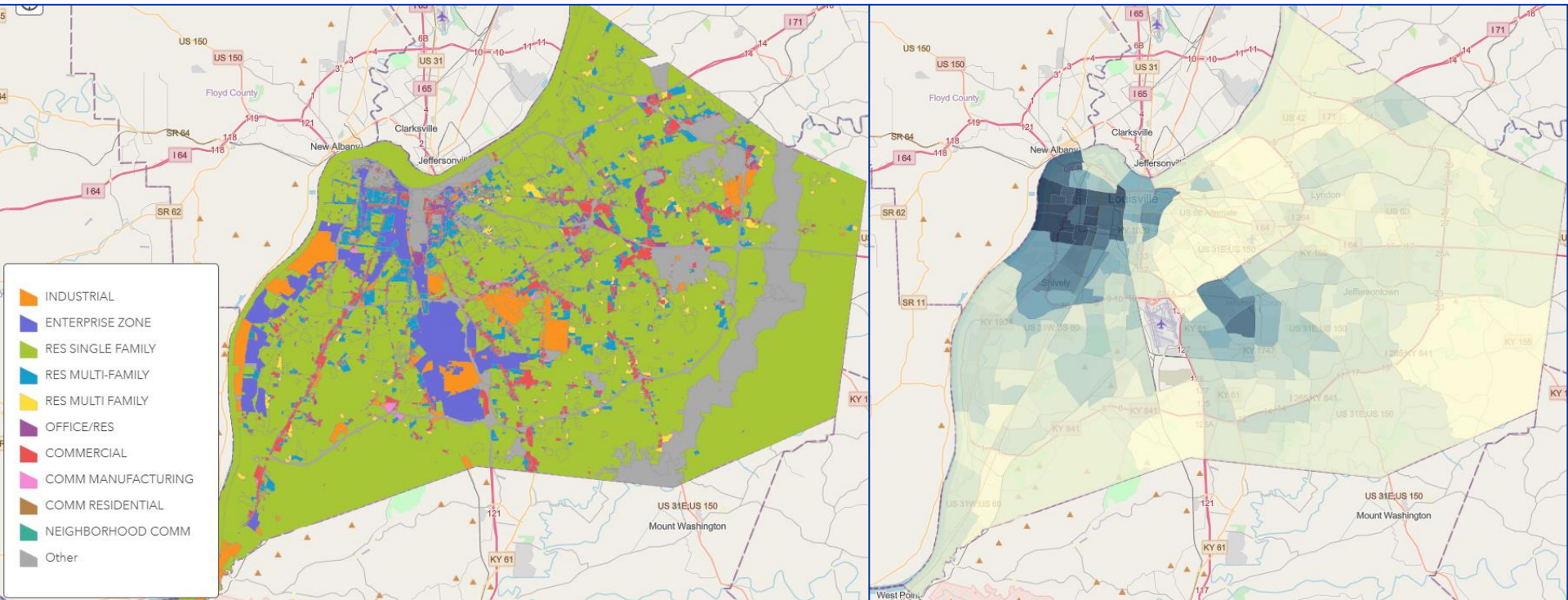


EJ Across Metro

- [GHG Emission Reduction Plan](#) and [Prepare Louisville Adaptation Plan](#)
 - Explore how climate change planning and action can work to help address EJ issues in Louisville Metro communities
- Environmental Justice Policy
 - There are efforts across LMG to develop Departmental and broader policies that address environmental justice issues throughout Louisville Metro
 - EJ Policy development is a strategy included in [Resilient Louisville](#)



Zoning and Population



LAND DEVELOPMENT CODE REFORM

PLANNING AND DESIGN SERVICES
444 S 5th Street, Suite 300
Louisville, KY 40202

502-574-4PDS
www.louisvilleky.gov/ldcreform
LDCReform@louisvilleky.gov

WORKSHOP SESSIONS

Topic	Date	Time
Housing #1	12/05/2020	10:00 a.m.
Housing #2	12/08/2020	6:00 p.m.
Environmental Justice	12/12/2020	10:00 a.m.
Process & Education	12/15/2020	6:00 p.m.

In order to be an equitable and inclusionary city, the lasting consequences of discriminatory land use policy must be identified, confronted and corrected.

The **Land Development Code** is a complex document that has a tremendous impact on our community. These workshops intend to identify reforms to make the Land Development Code more user-friendly while supporting diverse housing opportunities and promoting environmental justice.

*Meetings will be held virtually through WebEx and streamed on Develop Louisville's Facebook Live.

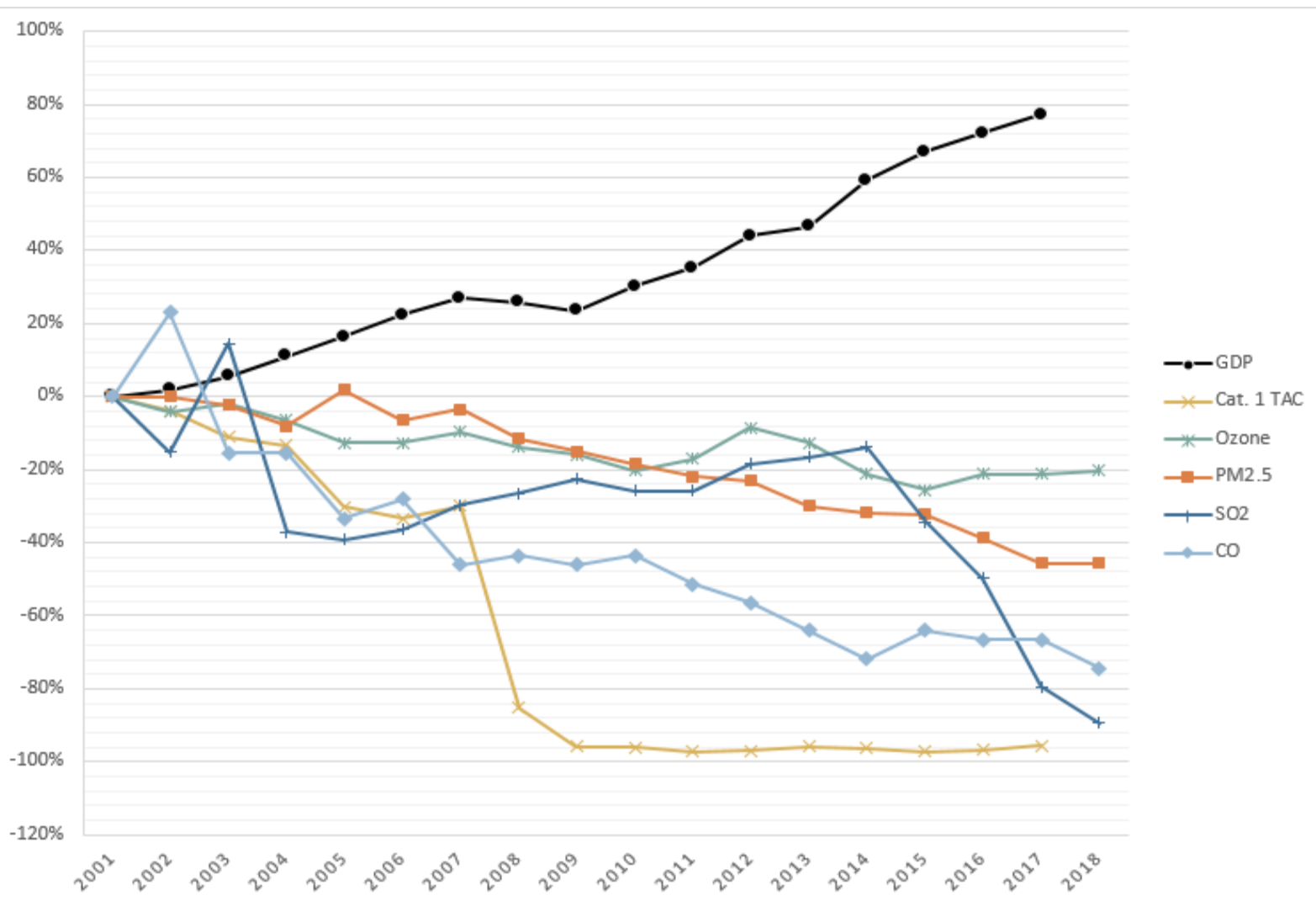
Visit www.louisvilleky.gov/ldcreform for links or call 502-574-4PDS for alternate attendance options.

Continuing the Conversation at APCD

- Support/create opportunities for **meaningful involvement by all people**.
- Continue offering **transparent and frequent** opportunities for our community to learn about our work and access our data.
- Continue highlighting **public participation opportunities** built into our processes, from reg development to implementation to enforcement.
- Work collectively with other LMG departments and agencies to **raise awareness** around EJ in Louisville



Heading in the right direction...



Resources

[APCD Open Records Request](#)

[EPA EJSCREEN](#)

[STAR Program](#)

[EPA National Air Toxics
Assessment](#)

[APCD Clearing the Air Workshop
Series](#)

[\(NATA\)](#)

[West Jefferson County
Community Task Force
\(WJCCTF\)](#)

[EPA Environmental Justice](#)

[EPA Hazardous Air Pollutants](#)

[Redlining in Louisville](#)

Resources

[Rubbertown Community
Advisory Council \(RCAC\)](#)

[EPA Reporting
EnvironmentViolations](#)

[EPA National Emissions
Inventory \(NEI\)](#)

[National Environmental Policy Act
Assist \(NEPAssist\)](#)

[Rubbertown Emergency
ACTion \(REACT\)](#)

[EPA Enforcement & Compliance
History Online \(ECHO\)](#)

Questions?

Louisville Metro Air Pollution Control District

701 W. Ormsby Ave.

Ste. 303

Louisville, Ky. 40203

(502) 574-6000

www.louisvilleky.gov/APCD

Keith H. Talley Sr., Director